AUG 14 1998

0612

96-JITW-04

I 49.2:F 53/31

FISH SCREEN FABRICATION AND MAINTENANCE PROJECT

LOCATED ON

THE SCOTT RIVER

AGREEMENT # 14-48-0001-96672

PROJECT IDENTIFICATION # 96-JITW-04

Project completed by:
Siskiyou Resource Conservation District
Gary Black
PO Box 268
Etna, CA 96027
Telephone # (530) 467-3975
Fax # (530) 467-5617

2002-012109/NF

Abstract: The purpose of the project was to implement fish screens installation and maintenance program in the Scott River watershed which would supplement the diversion screening efforts of the California Department of Fish and Game (CDFG). The purpose of the program is to provide: better management of resources (water for agricultural purposes), fishery protection through screen installation, and explore economic possibilities of privatizing fish screen fabrication and routine maintenance. The body of the project changed several times due to diversion user response regarding policy of the Endangered Species Act and transforming fish screen specifications. In the end, the funding was used to implement two fish screens which meet both CDFG and National Marine Fisheries Service (NMFS) specifications. One screen is located at the Wright-Fletcher Diversion, located on Kidder Creek. This diversion was the largest unscreened diversion in Scott Valley and the second largest diversion in the watershed. The second screen was constructed on the Fay Diversion Ditch. The Fay Ditch is located in a critical portion of Sugar Creek, a prominent refugia for juvenile salmonids.

The projects funding was paired with two other funding sources to complete both screens (other source are the Klamath River Task Force and NRCS "CRP" cost share). We are confident that the implementation of these screens will protect hundreds if not thousands of salmonids each year. The structures will be a benefit to both the diversion users and the CDFG which will use the screen as a trapping facility. The screens were very difficult to "get off the ground", but the projects gained local interest and fostered positive speculation about a possible entrepreneurial business.

Background: The Scott River, which runs through Scott Valley, is a major tributary to the Klamath River. The Scott supports wild stocks of chinook, coho, steelhead and rainbow trout. There are many tributaries to the Scott which contain prime spawning and rearing habitats for salmon and steelhead.

The citizens of Scott Valley are proactive in their efforts to sustain anadromous populations. The Siskiyou Resource Conservation District (RCD), Scott River Watershed Coordinated Resource Management Planning (CRMP) Council, and responsible agencies have developed consensus plans which sites causes and possible solutions to declining fisheries populations. A major goal of the Siskiyou RCD and the Scott River CRMP is to install and maintain fish screens on diversions within the Scott River Drainage.

The Department of Water Resources has listed 152 diversions within the Scott River watershed. The RCD has identified approximately 120 active diversions of which only 38 are screened. Because of budget cuts and maintenance costs of existing screens, the California Department of Fish and Game is able to fabricate a maximum of two fish screens a year. The Siskiyou RCD is currently implementing an aggressive fish screen fabrication program using technical assistance from the CDFG, NMFS and Natural Resource Conservation Service (NRCS).

Countless juveniles are lost by the nearly 120 unscreened diversions in the Scott River watershed. Few studies have been done on fishery densities and populations in the tributaries to the Scott River. Most diversion take out points are located in the mid and lower reaches of tributaries where anadromous fish spawn. Therefore, we can assume significant numbers of juvenile fish are lost to specific unscreened diversions.

Diversions are important to the agricultural community, which is the predominant economy in Scott Valley. Diversion users are aware of the adverse effects unscreened diversions can have on fisheries and are willing to have screens installed. The cost of fabricating and installing a self-cleaning fish screen composed of stainless steel and aluminum is above what most landowners can personally afford. Therefore, many diversions remain unscreened even though most landowners are conscious and concerned about loss of fish.

Project Implementation Delays: As previously mentioned, the project was very difficult to "get on the ground" due to the threatened listing of coho salmon. The listing brought NMFS inland as the lead agency. NMFS has developed screening specifications for other listed salmonid stocks which were significantly different from CDFG. The RCD, with design assistance from NRCS did not know how to design the screen. With the help of NRCS, the Siskiyou RCD and Shasta Valley RCD were instrumental in encouraging the CDFG and NMFS to meet together both on the state and regional level. NMFS and CDFG screen engineers met in Scott Valley in the spring of 1997 to visualize the hardships of installing small screens in steep, wild, and often unattainable locations and refine design specifications. A mutually agreed upon screen specification came out in April of 1997. Unfortunately, the timing of the listing and the needed combination of screen specifications forced the RCD to wait until the end of the 1997 irrigation season to begin construction.

Screen Maintenance Position:

A fish screen fabrication and maintenance program in addition to that of the California Department of Fish and Game's program was expected to be important to the community as the need for routine general screen maintenance increased with the installation of more fish screens. The unanticipated response to the listing of the coho salmon delayed the need of the proposed position. The unanticipated response came from the increased desire for fish screen installation on diversions. The RCD decided it would be financially prudent to place the responsibility of general screen maintenance on the diversion users. Therefore, willingness of diversion users to maintain their screen was added to the factors determining screening prioritization.

In sum, the demand for fish screens eliminated the need for a screen maintenance position. The proposed position also was intended to gain flow information in the drainage. This information will be gained through a 1999 monitoring proposal and a funded water balance study. The USFWS agreed with the request for change in the scope of the project and the funding was then focused solely on fish screen implementation. The project still satisfies the secondary focus of providing "Jobs in the Woods" by generating employment opportunities during the winter months. The Siskiyou RCD feels very strongly about providing employment to the community. Fish screen fabrication appears to be an excellent match for Jobs in the Woods funding as many citizens in Scott Valley are only seasonally employed. Fish screens can only be installed during the winter months (non-irrigation season) which meshes with the need for employment.

Screen Construction: The original intention was to screen 20 cfs of diverted water within the Scott River Drainage. The project ended in providing partial funding to screen 52 cfs. The Fish Screen Maintenance and Fabrication Project provided over 56% of the funding. We can extrapolate that the funding provided screening of approximately 28 cfs under the new, more expensive screening specifications.

The RCD worked with NRCS engineers and the CDFG to refine the designs. The NRCS was paramount to the development of the screen designs. The RCD wanted to focus on providing construction opportunities to local citizens who possessed the needed abilities. A bid package was developed for each screen and the proposed projects were publicized in two local newspapers. The bid packages were sent out to over 20 interested persons. The bid package contained the design drawings, the bid process, needed qualifications, and required insurance and bonding. The RCD wanted to provide an employment option for all capable people. Research found that a contractors license was not required, when improving an agricultural water delivery system (State Contractor's License Board) and the most suitable bond package.

Both fish screens are Vertical Plate Self-Cleaning screens which have moving brushes that clean the screen surface. The screen are placed in the diversion ditch rather then the active channel in order to better protect the structure and modify flow velocities. Both structures have by-pass pipes which return fish back to the stream. The by-pass pipes are sized so the diversion user can now return water back to the stream when not needed. A design is attached in a copy of the bid packet.

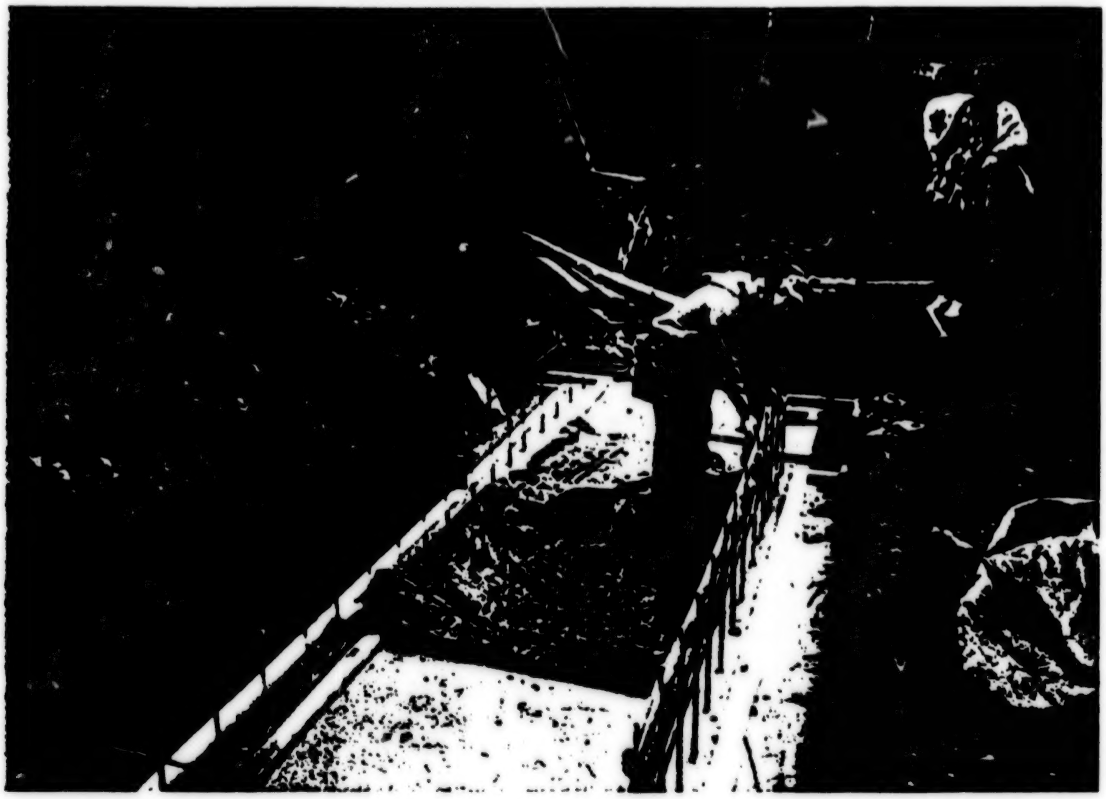
Conclusion: The Siskiyou RCD is very pleased with the Fish Screen Fabrication and Maintenance Project. We are pleased that diversion users are willing to accept the BI-weekly responsibility of cleaning and maintaining the screens. This provides more funding for screen installation. The RCD has focused on constructing fish screens and selected screen installation as the highest priority project. Previously, the RCD focused on increasing the salmonid holding capacity of the watershed. Currently the RCD has focused on protecting existing fisheries and habitat. We have found that the protection of resources usually is more cost efficient then restoring or creating new habitat.

The Siskiyou RCD has an engineer on staff as well as the needed design software, and construction background to support such an endeavor. The CDFG estimates that screen construction costs about $2,000 to $2,500 per cfs. In this project, the RCD constructed approximately 28 cfs with under $40,000. We believe we can refine our designs and construction process to further reduce the costs on future fish screens.

FINAL BUDGET

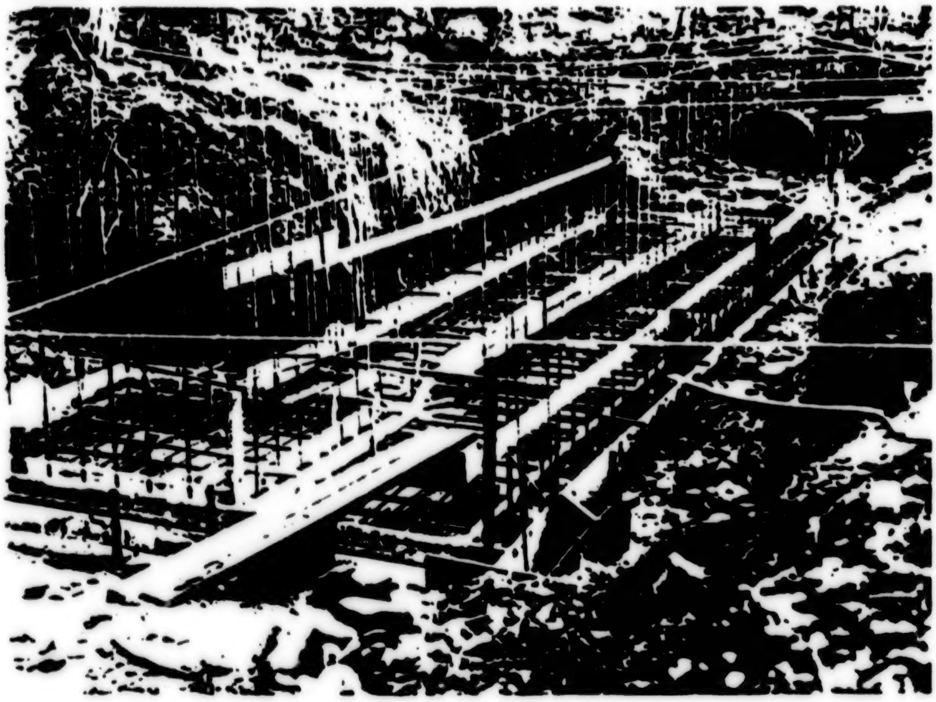
Fish Screen Fabrication & Maintenance
14-48-0001-96672
96-JITW-04

Items	Budget	Amount Remaining
Salaries	$10,201.00	$0.00
Travel	$ 1,500.00	$0.00
Permits/surveys	$ 900.00	$0.00
Equip/Materials	$ 9,100.00	$0.00
Operations\ Sub-Contractor	$13,630.00	$0.00
Sub Total	$36,201.00	$0.00
Administration	$ 3,620.00	$0.00
Total	**$39,821.00**	**$0.00**

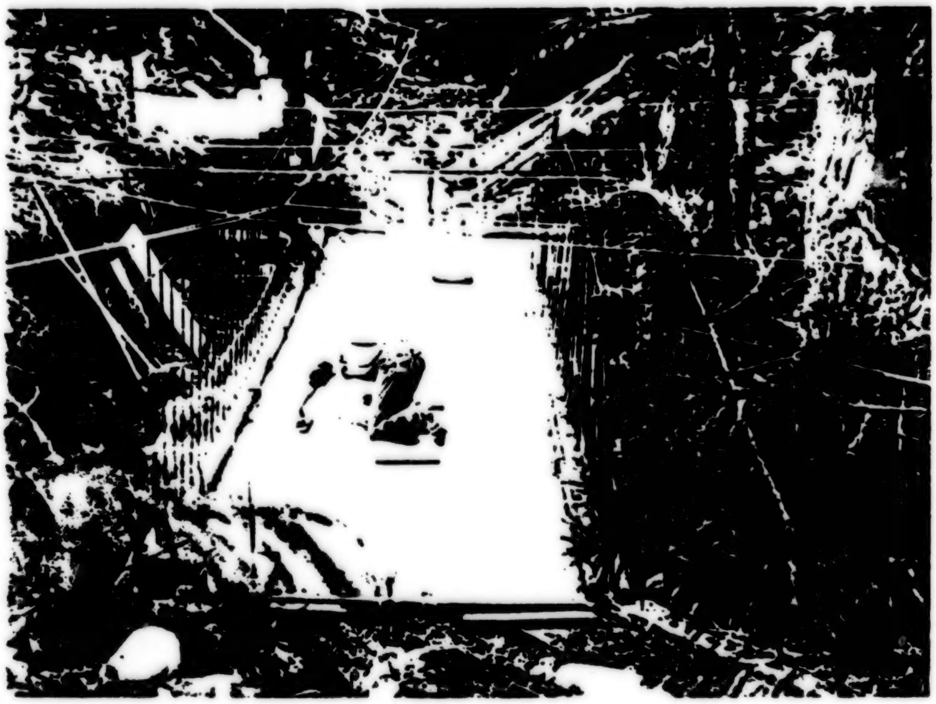


Fay Ditch on Sugar Creek under construction. A 7 cfs screen was designed for the location. Crew is tying re-bar.

Fay Ditch Fish Screen. Forms are constructed for concrete walls



Kidder Creek Fish Screen located on Wright-Fletcher Ditch at re-bar tying stage

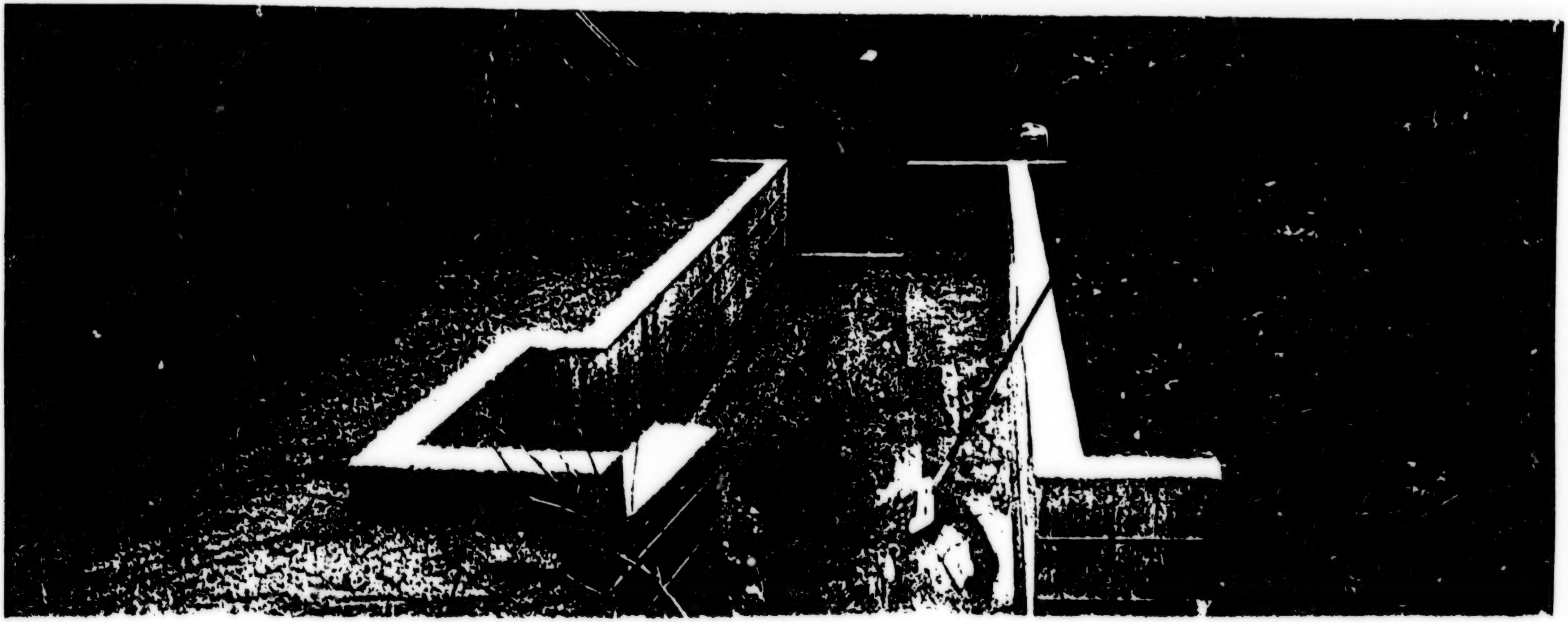


Kidder Creek Screen. Finishing of concrete pad.

** Photos of completed fish screens will be submitted upon receipt of developed film.

BLANK

PAGE



8

8

END

04-8-02